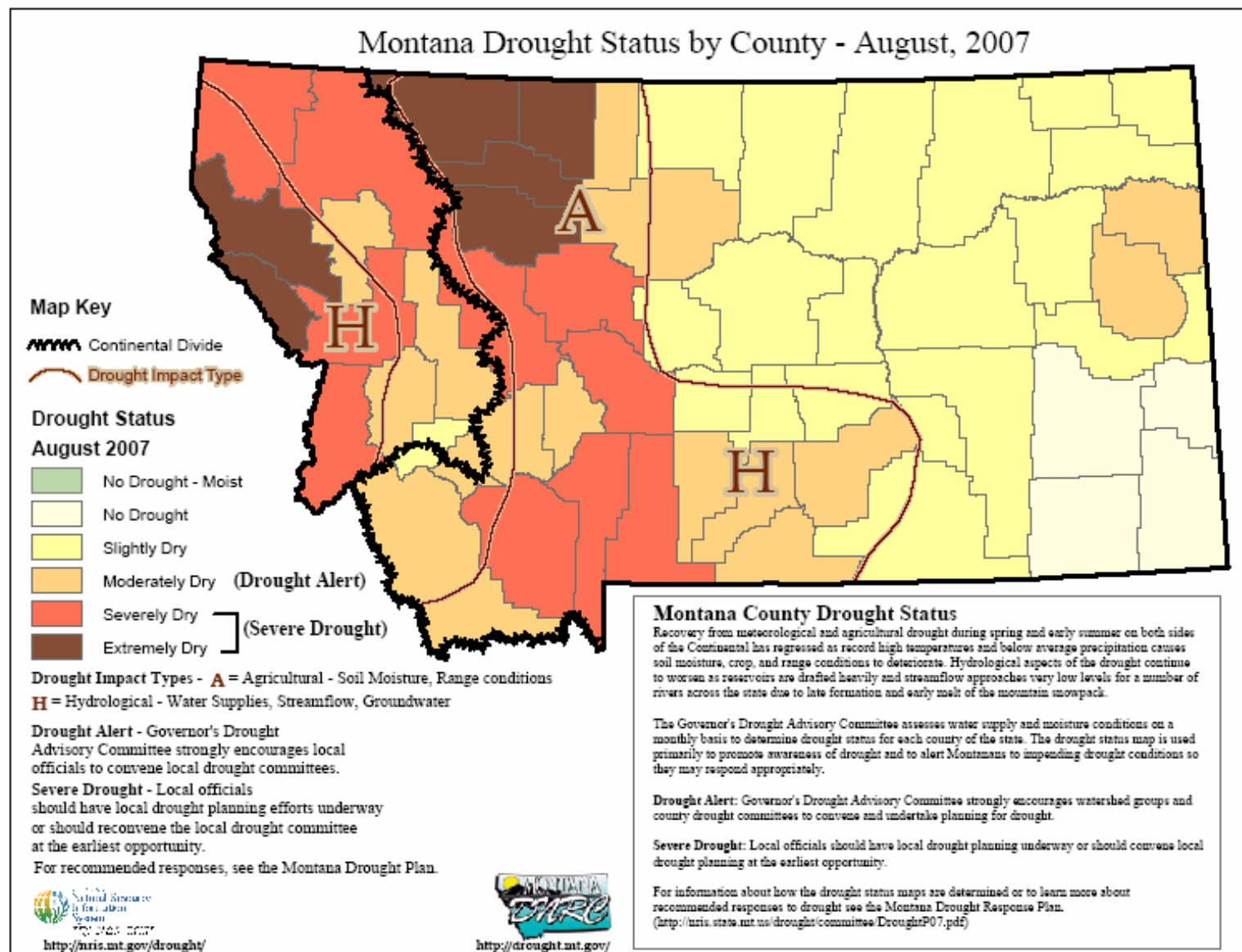
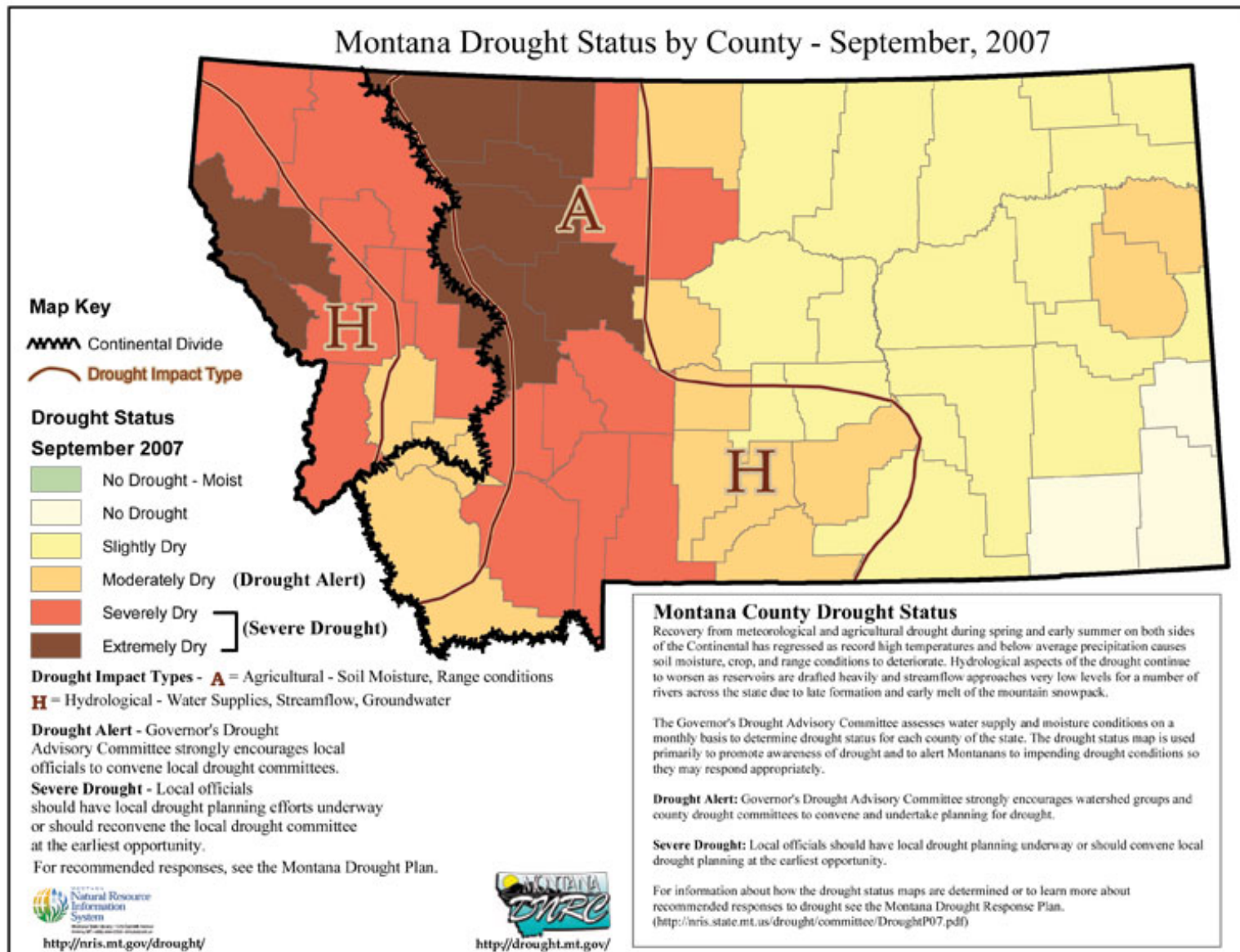


Montana Drought Status - August



Montana Drought Status - September





Governor's Drought Advisory Committee Meeting

September 19, 2007

National Weather Service

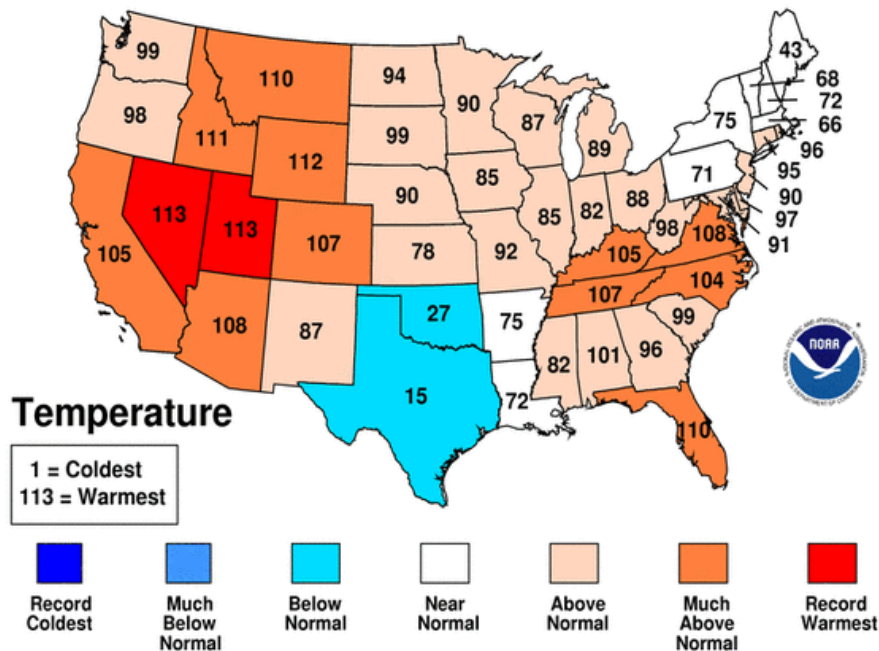
Gina Loss

Temp and Precip Ranks by State

Summer 2007

June-August 2007 Statewide Ranks

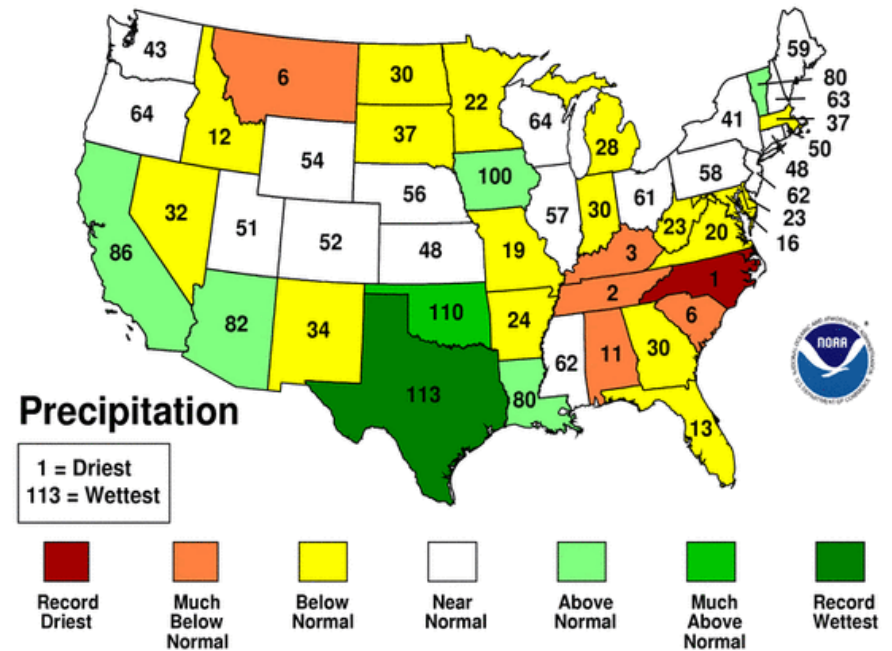
National Climatic Data Center/NESDIS/NOAA



- 💧 4th warmest of 113 years
- 💧 'Much Above Normal'

June-August 2007 Statewide Ranks

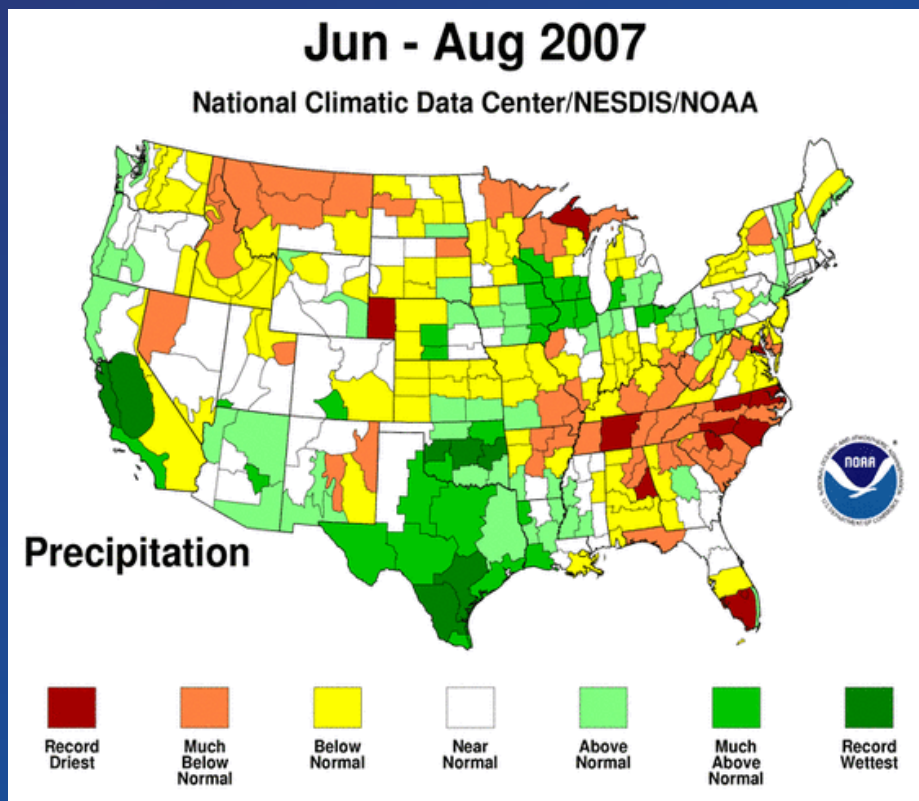
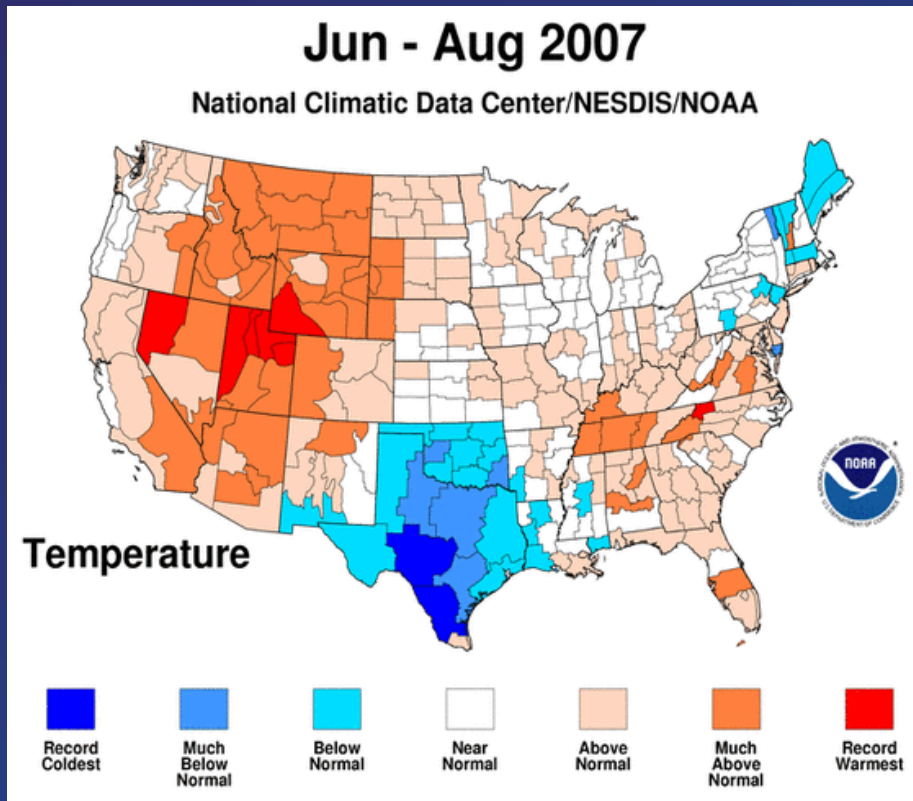
National Climatic Data Center/NESDIS/NOAA



- 💧 6th driest of 113 years
- 💧 'Much Below Normal'

Temp and Precip Ranks by Division

Summer 2007

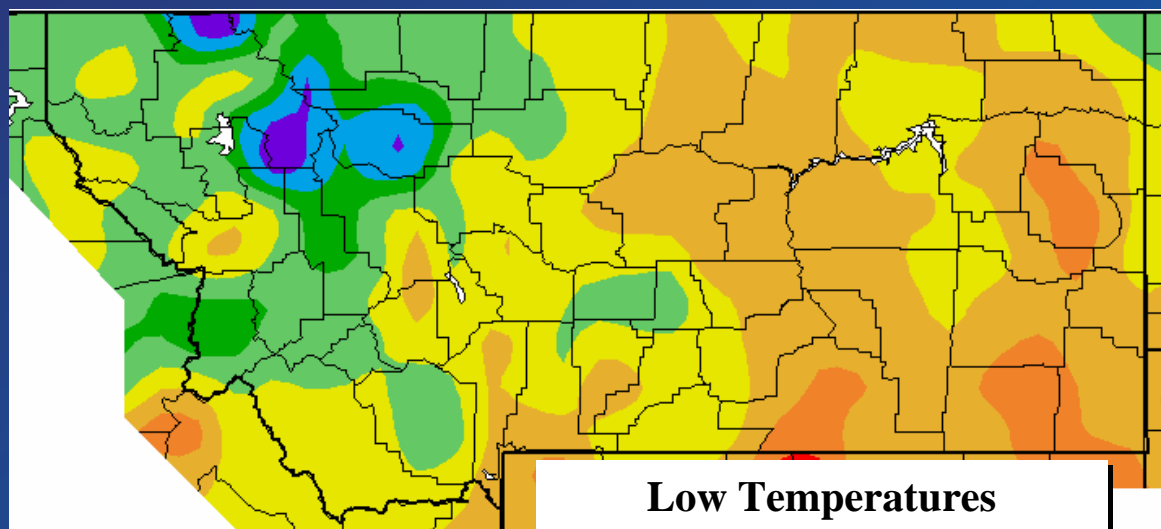
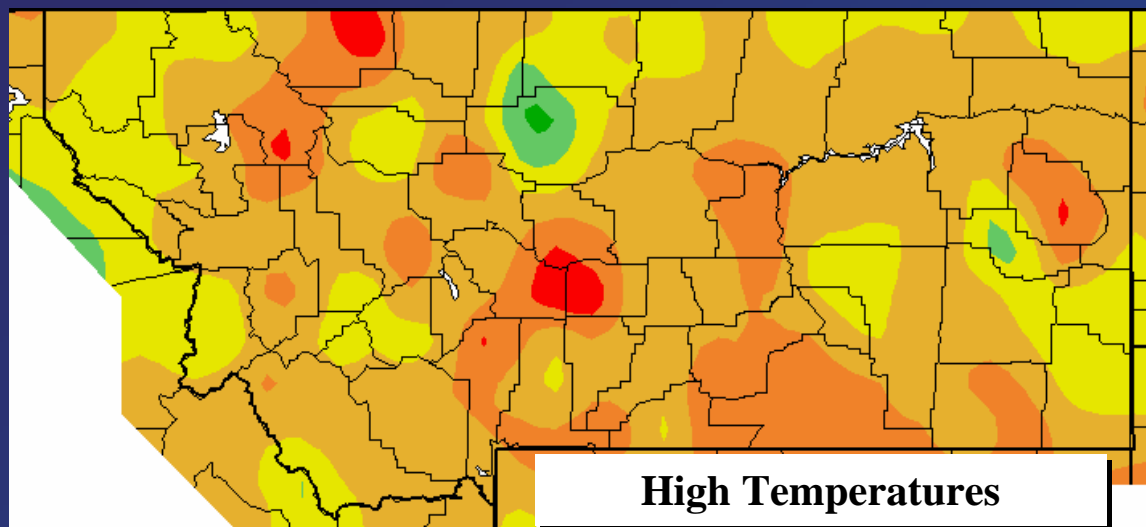


💧 All divisions 'Much Above Normal'

- 💧 4 divisions 'Much Below Normal'
- 💧 2 divisions 'Below Normal'
- 💧 1 division 'Near Normal'

Temperature Anomalies

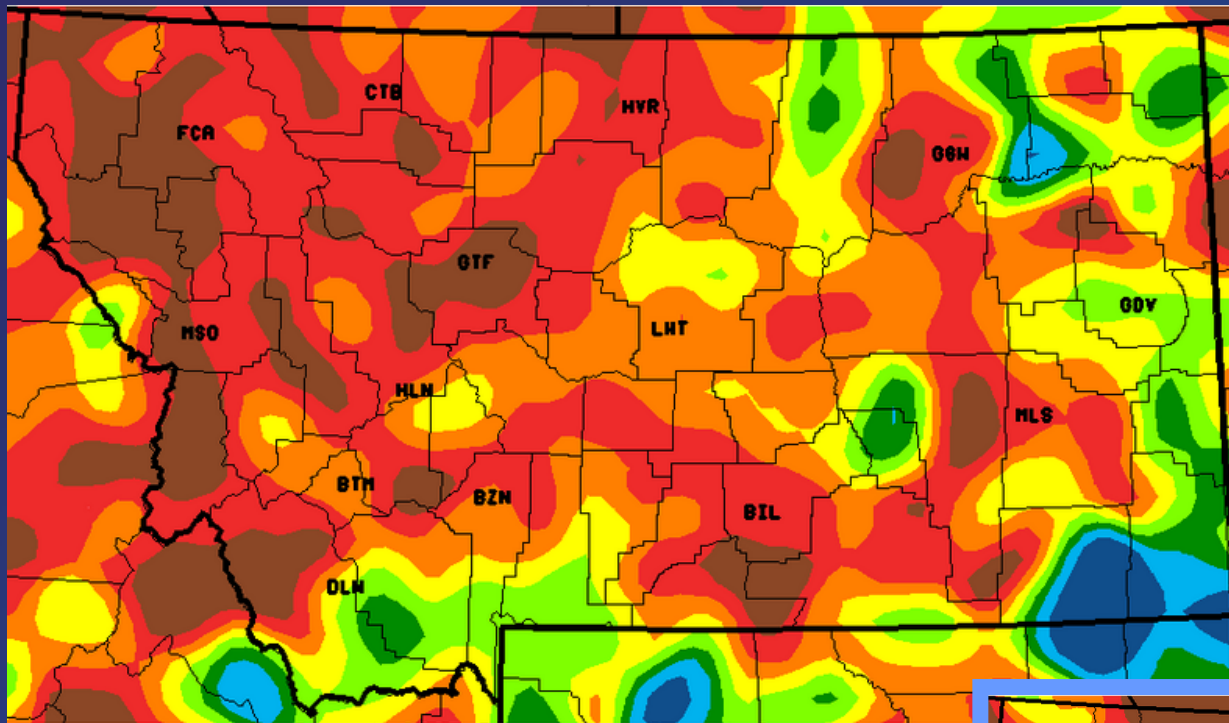
August 2007



- Temperatures averaged near to above normal
 - *Highs mostly 2 to 6 degrees above normal*
 - *Lows near to 4 degrees below normal west and Rocky Mountain Front... near to 4 degrees above normal remainder of state*

Percent of Normal Precipitation

August 2007



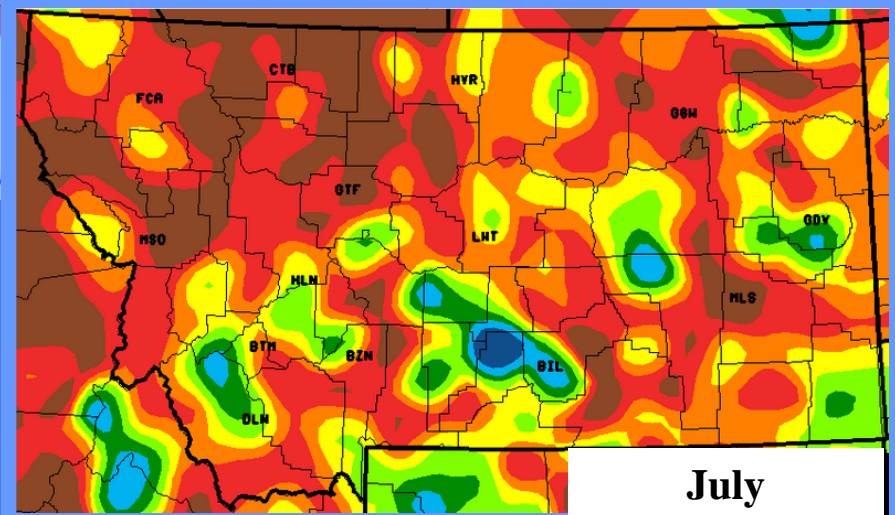
August 2007 Percent of Normal Precipitation
Period of Normal: 1971-2000

20 40 60 85 115 150 200

NOTE: Data used to generate this image are
PROVISIONAL AND SUBJECT TO CHANGE.

<http://www>

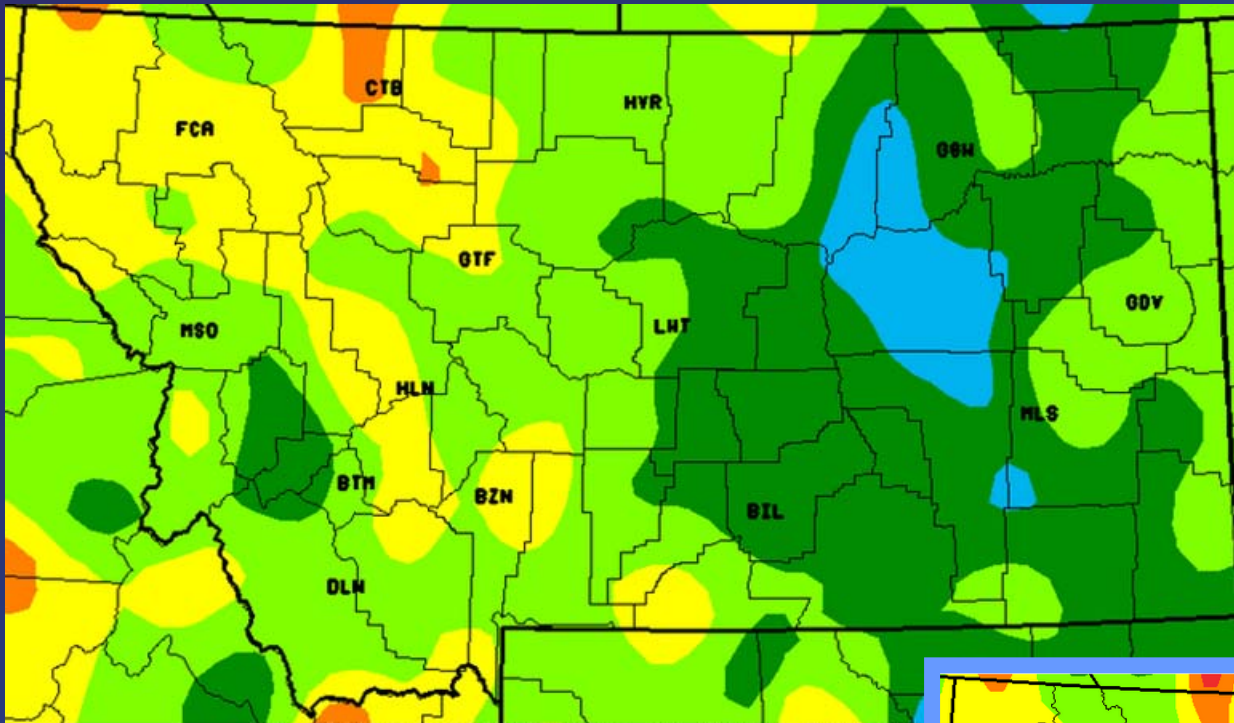
- More than half of state well below normal
 - Large areas less than 20% of normal
- Only isolated areas averaged above normal



Percent of Normal Precipitation

Water Year 2007

- October 2006 – August 2007
- Most of state continues to average near normal
- Some areas continue to lose ground
 - Northwest and along Rocky Mountain Front

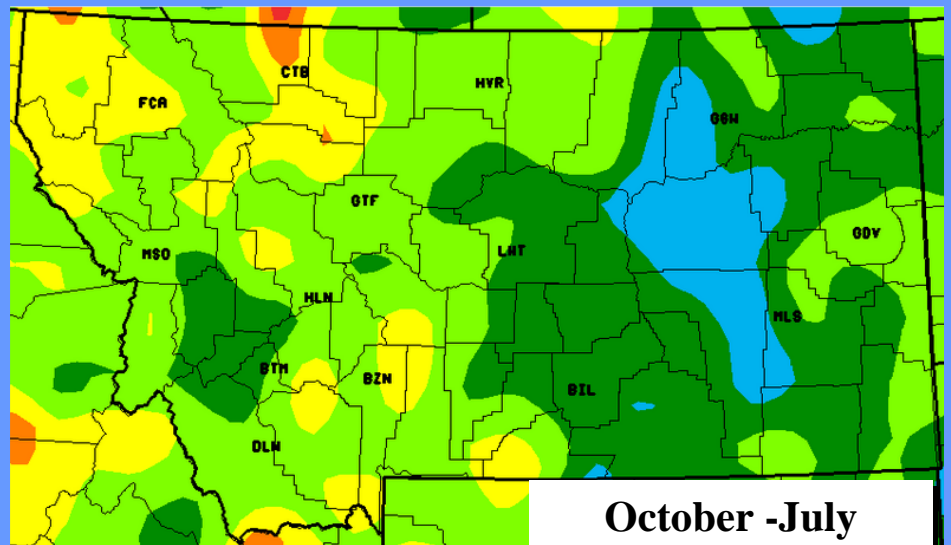


Oct 2006-Aug 2007 Percent of Normal Precipitation
Period of Normal: 1971-2000

20 40 60 85 115 150 200

NOTE: Data used to generate this image are
PROVISIONAL AND SUBJECT TO CHANGE.

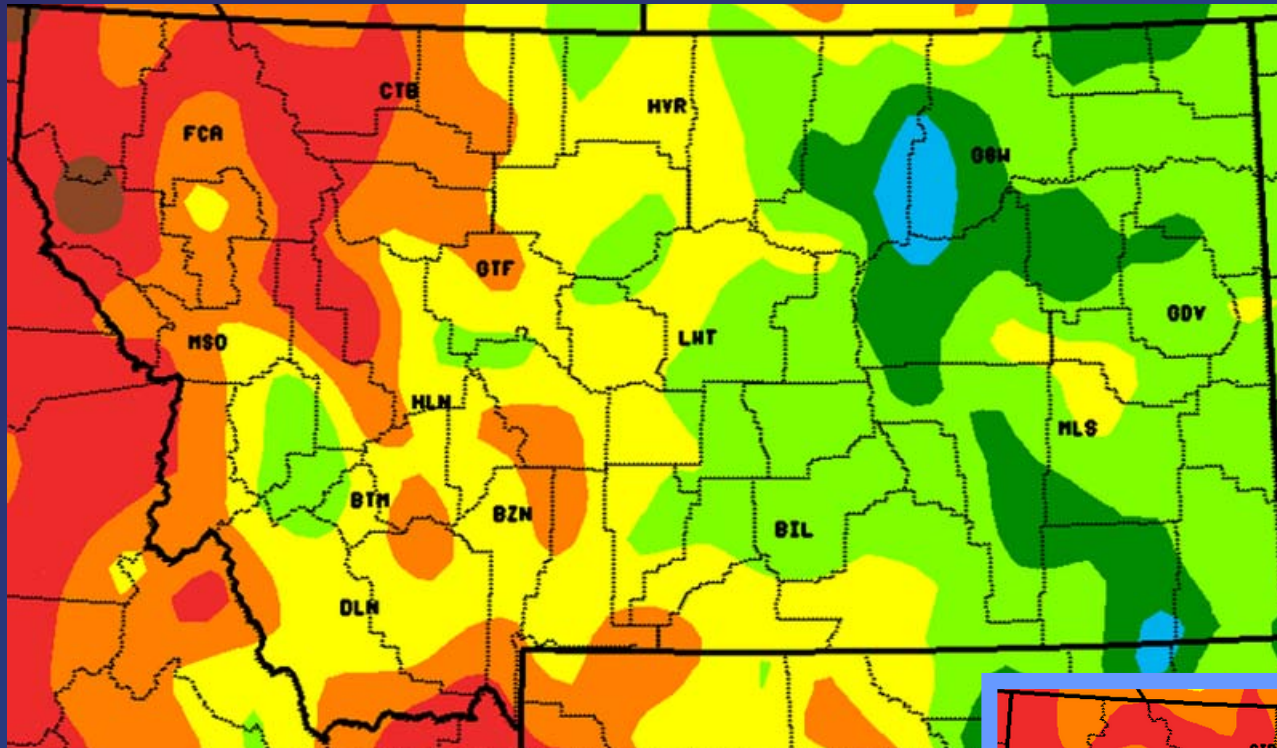
http.



October -July

Percent of Normal Precipitation

Crop Year 2007



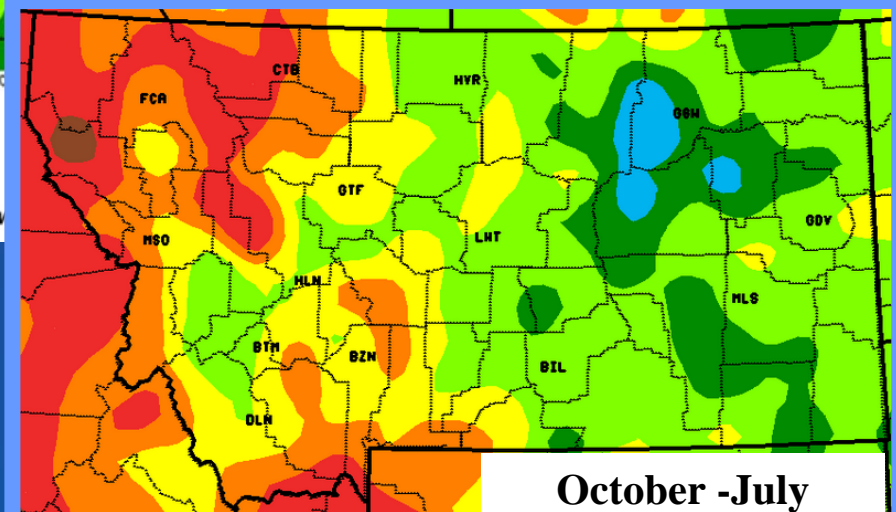
- April – August 2007
- West mostly below to well below normal
- East mostly near normal

Apr-Aug 2007 Percent of Normal Precipitation
Period of Normal: 1971-2000

20 40 60 85 115 150 200

NOTE: Data used to generate this image are
PROVISIONAL AND SUBJECT TO CHANGE.

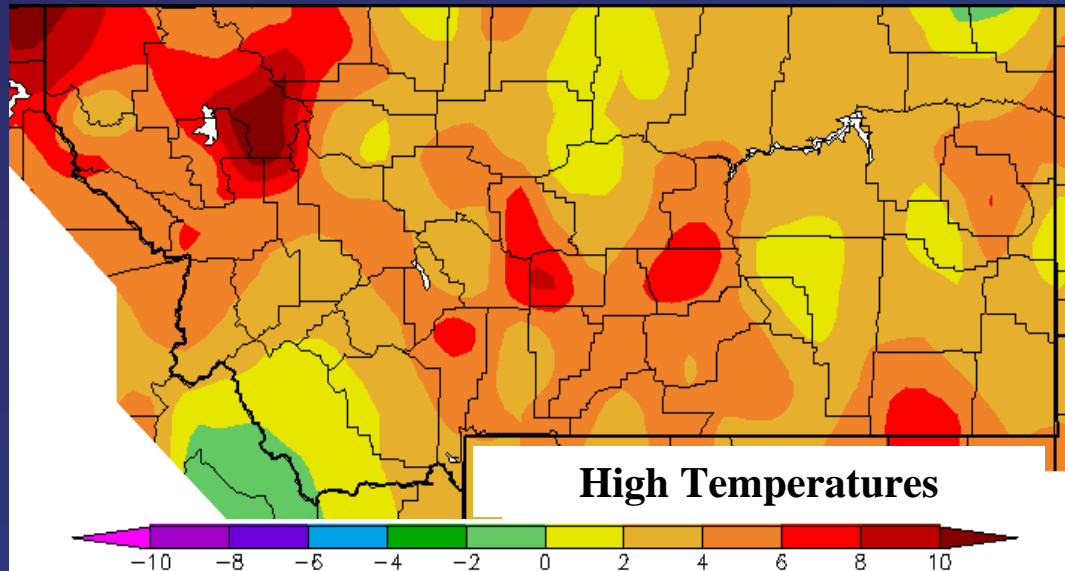
<http://v>



October -July

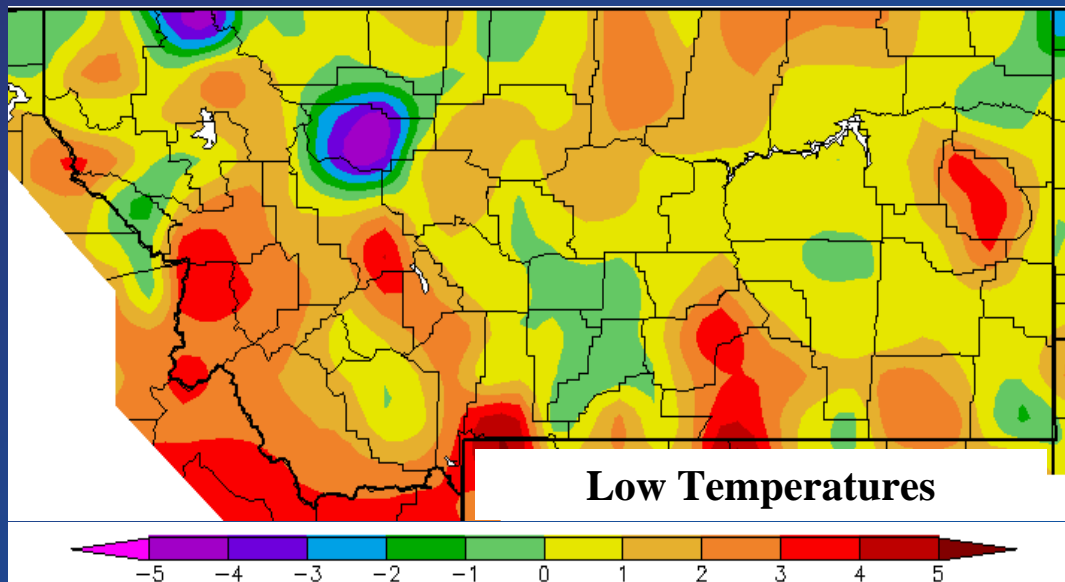
Temperature Anomalies

September 1-17, 2007



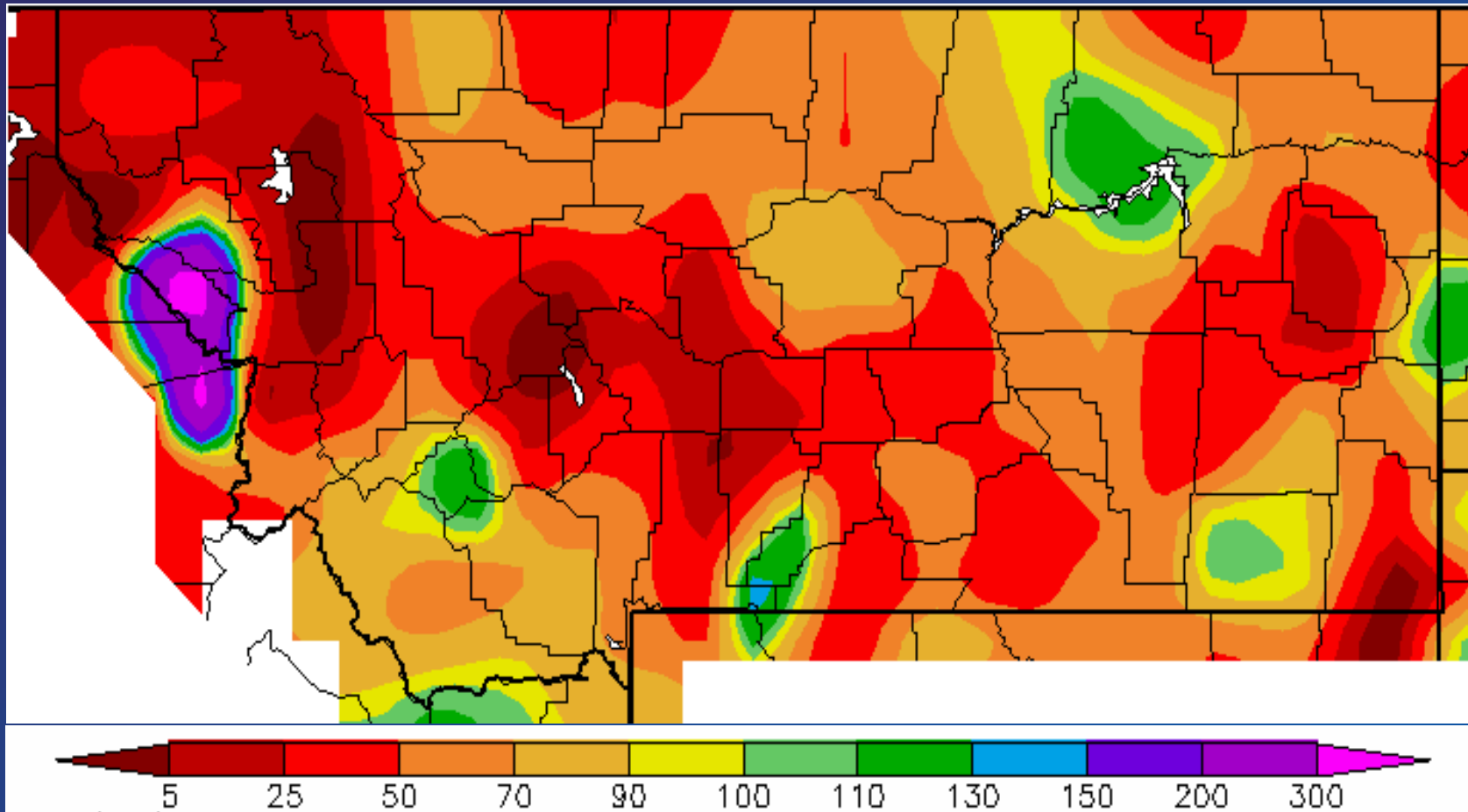
• Temperatures averaging near to above normal over most of Montana

- *Highs mostly 2 to 6 degrees above normal*
 - Isolated areas 6 to 12 degrees above normal
- *Lows mostly near to 4 degrees above normal*



Percent of Average Precipitation

September 1 - 17, 2007



- 💧 About one third of state at less than 50% of normal

Precipitation Totals

September and Water Year 2007

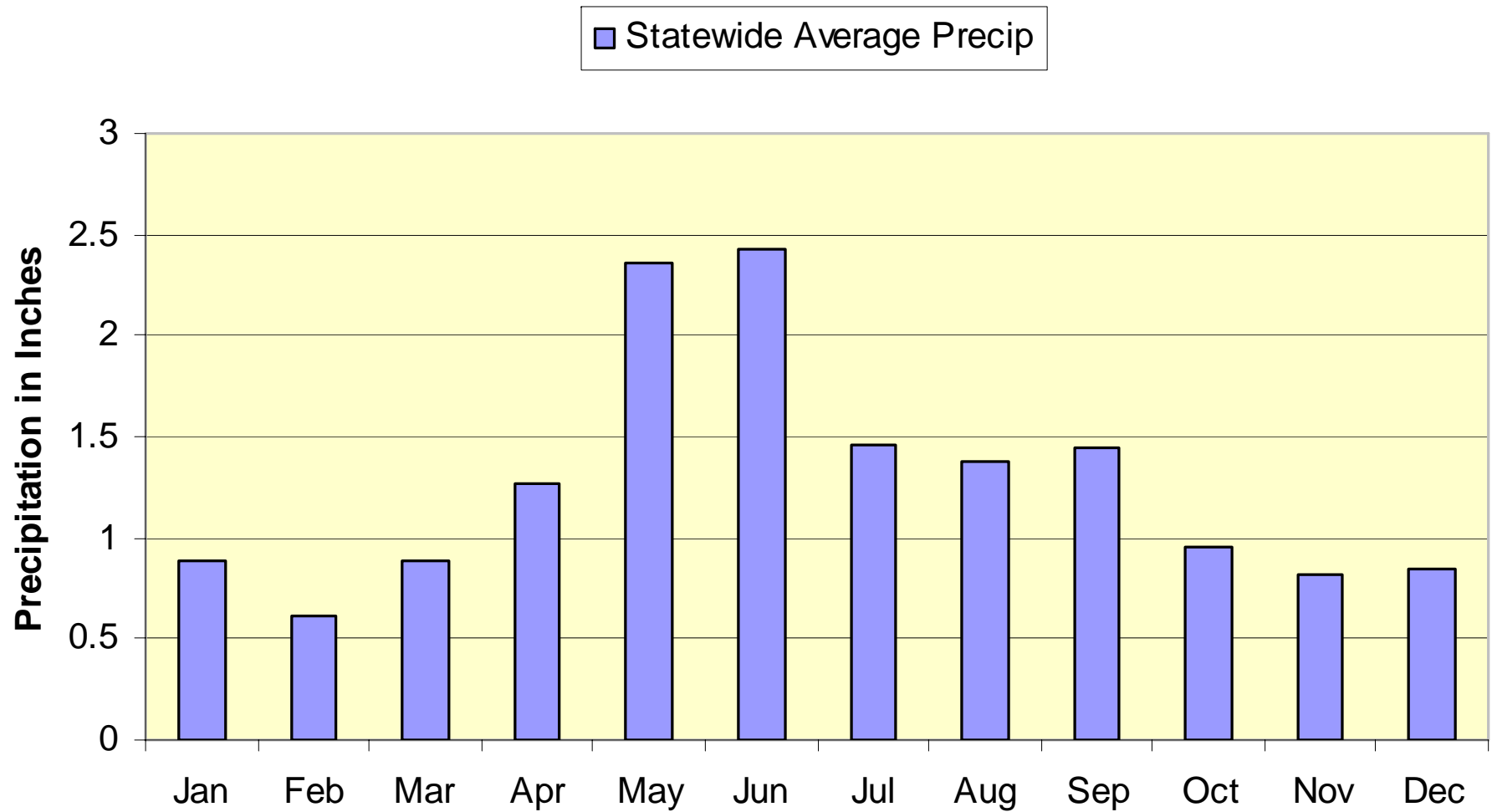
	SEPTEMBER 1 - 17				WATER YEAR TO DATE			
	ACTUAL PCPN	NRML PCPN	+/- NRML	% OF NRML	ACTUAL PCPN	NRML PCPN	+/- NRML	% OF NRML
WESTERN MONTANA								
BUTTE	0.92	0.68	0.24	135	12.21	12.37	-0.16	99
KALISPELL	0.08	0.68	-0.60	12	11.33	16.69	-5.36	68
MISSOULA	0.08	0.68	-0.60	12	11.16	11.70	-0.54	95
SOUTHWEST MONTANA								
BIG SKY	0.63	1.10	-0.47	57	18.18	19.69	-1.51	92
BOULDER	0.15	0.67	-0.52	22	8.72	11.12	-2.40	78
BELGRADE FIELD	0.29	0.82	-0.53	35	13.12	14.10	-0.98	93
BOZEMAN MSU	0.40	1.02	-0.62	39	22.92	18.51	4.41	124
DILLON AIRPORT	0.36	0.58	-0.22	62	11.65	9.55	2.10	122
ENNIS	0.48	0.68	-0.20	71	14.22	13.07	1.15	109
HELENA	0.03	0.68	-0.65	4	9.35	10.85	-1.50	86
ROGERS PASS 9 NNE	0.28	0.96	-0.68	29	13.91	17.12	-3.21	81
TOWNSEND	0.04	0.62	-0.58	6	8.78	10.33	-1.55	85
W YELLOWSTONE	0.45	0.85	-0.40	53	11.26	21.12	-9.86	53
WISDOM	0.60	0.60	-0.00	100	11.94	11.51	0.43	104

Precipitation Totals

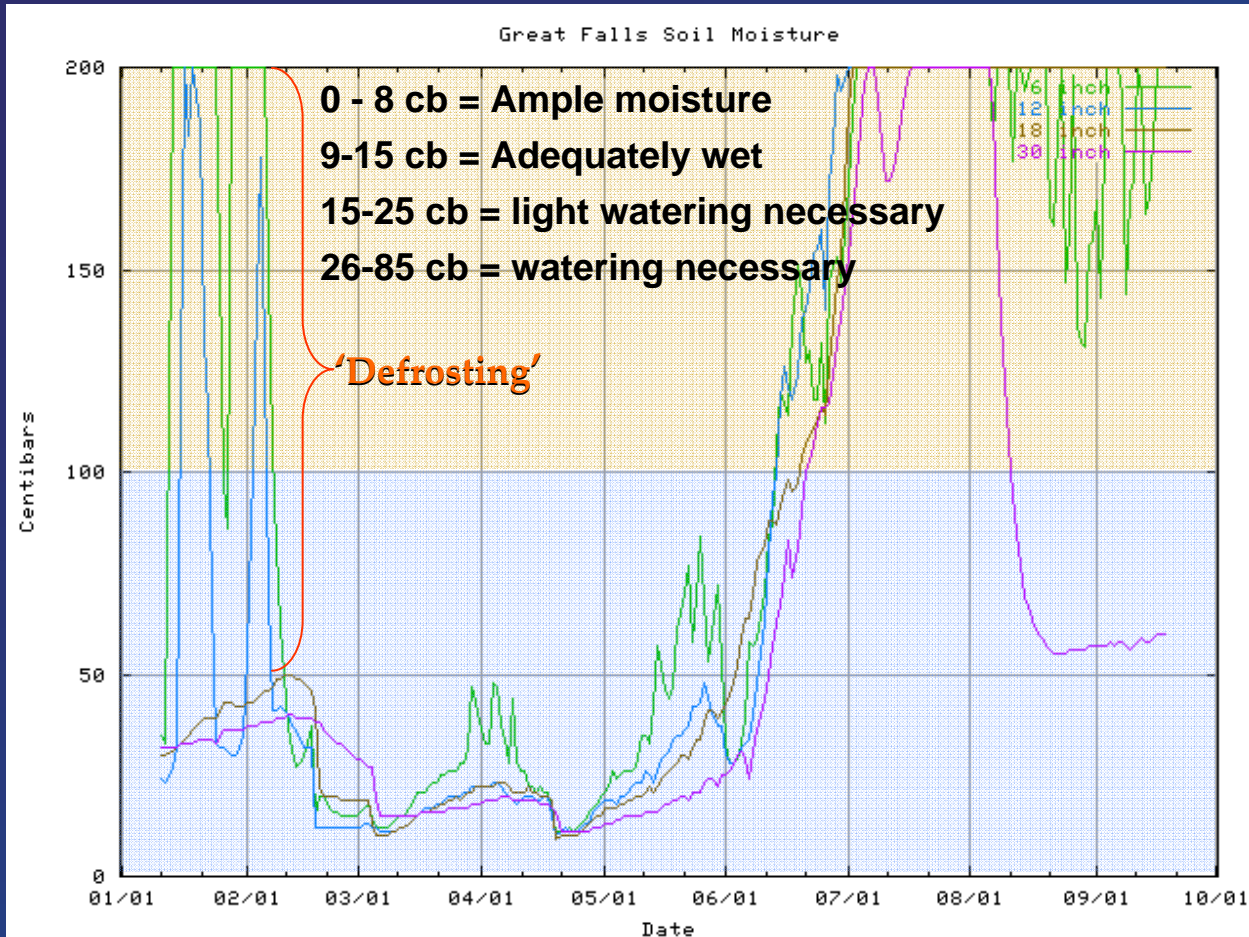
September and Water Year 2007

	SEPTEMBER 1 - 17				WATER YEAR TO DATE			
	ACTUAL PCPN	NRML PCPN	+/- NRML	% OF NRML	ACTUAL PCPN	NRML PCPN	+/- NRML	% OF NRML
CENTRAL MONTANA								
BILLINGS	0.40	0.69	-0.29	58	15.20	14.04	1.16	108
CASCADE 20 SSE	0.00	0.85	-0.85	0	13.10	13.81	-0.71	95
CHESTER	0.34	0.52	-0.18	65	8.46	10.28	-1.82	82
CHOTEAU	0.38	0.62	-0.24	61	6.05	10.24	-4.19	59
CONRAD	0.00	0.63	-0.63	0	4.25	11.68	-7.43	36
CUT BANK	0.64	0.77	-0.13	83	2.61	12.10	-9.49	22
FORT ASSINNIBOINE	0.47	0.71	-0.24	66	10.81	12.50	-1.69	86
FORT BENTON	0.48	0.75	-0.27	64	11.63	13.21	-1.58	88
GOLD BUTTE 7 N	0.15	0.91	-0.76	16	11.41	13.14	-1.73	87
GRASS RANGE	0.79	0.75	0.04	105	19.01	15.99	3.02	119
GREAT FALLS	0.36	0.74	-0.38	49	11.44	14.45	-3.01	79
HARLEM	0.49	0.80	-0.31	61	12.00	10.98	1.02	109
HAVRE	0.39	0.64	-0.25	61	11.65	11.07	0.58	105
LIVINGSTON	0.14	0.85	-0.71	16	15.28	15.10	0.18	101
LEWISTOWN	0.63	0.86	-0.23	73	17.52	17.33	0.19	101
MARTINSDALE 3 NNW	0.07	0.73	-0.66	10	11.57	13.11	-1.54	88
NEIHART 8 NNW	0.22	1.19	-0.97	18	23.24	20.63	2.61	113
SHELBY	0.31	0.58	-0.27	53	6.46	9.20	-2.74	70
STANFORD	0.74	0.88	-0.14	84	15.98	16.55	-0.57	97
SWEET GRASS	0.31	0.93	-0.62	33	8.70	14.13	-5.43	62
VALIER	0.40	0.74	-0.34	54	6.33	11.90	-5.57	53
WHITE SULPHUR SPRG	0.18	0.71	-0.53	25	7.95	12.70	-4.75	63
EASTERN MONTANA								
GLASGOW	0.50	0.59	-0.09	85	14.47	10.86	3.61	133
MILES CITY	0.23	0.67	-0.44	34	11.69	12.94	-1.25	90

Statewide Average Precipitation



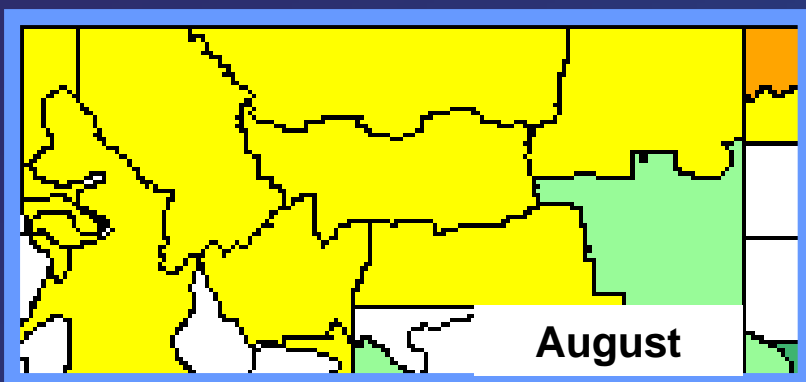
Great Falls Soil Moisture



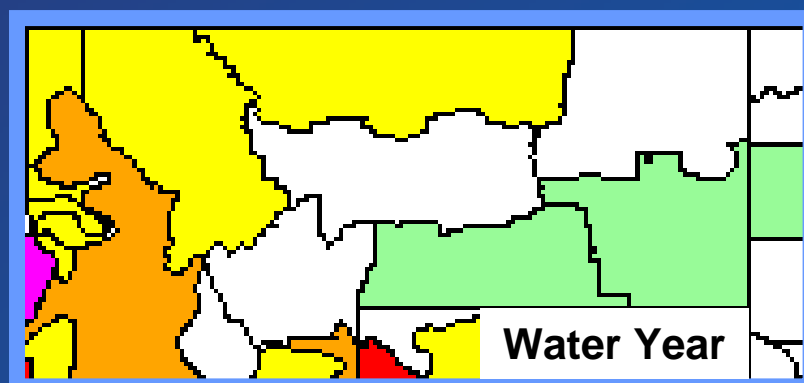
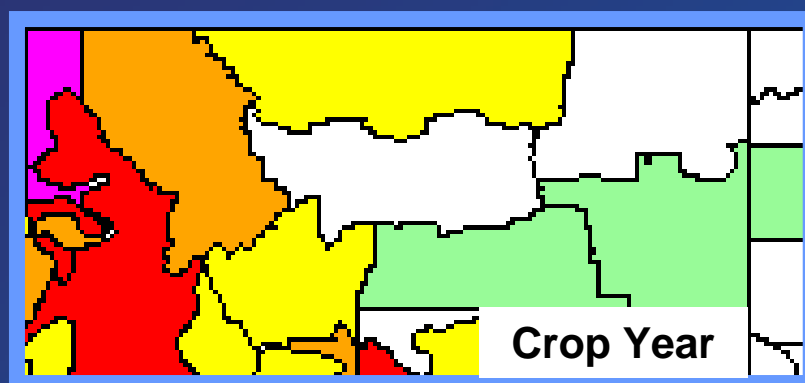
- 6" - 200cb
- 12" - 200cb
- 18" - 200cb
- 30" - 61cb

1...4 and 10 Month Precipitation Percentile

August 2007



- Represents the likelihood that the precipitation value observed over the number of months indicated would not be exceeded.



98% and above
95.0% to 97.9%
87.5% to 94.9%
66.6% to 87.4%
33.4% to 66.5%
12.6% to 33.3%
5.1% to 12.5%
2.1% to 5.0%
2.0% and below

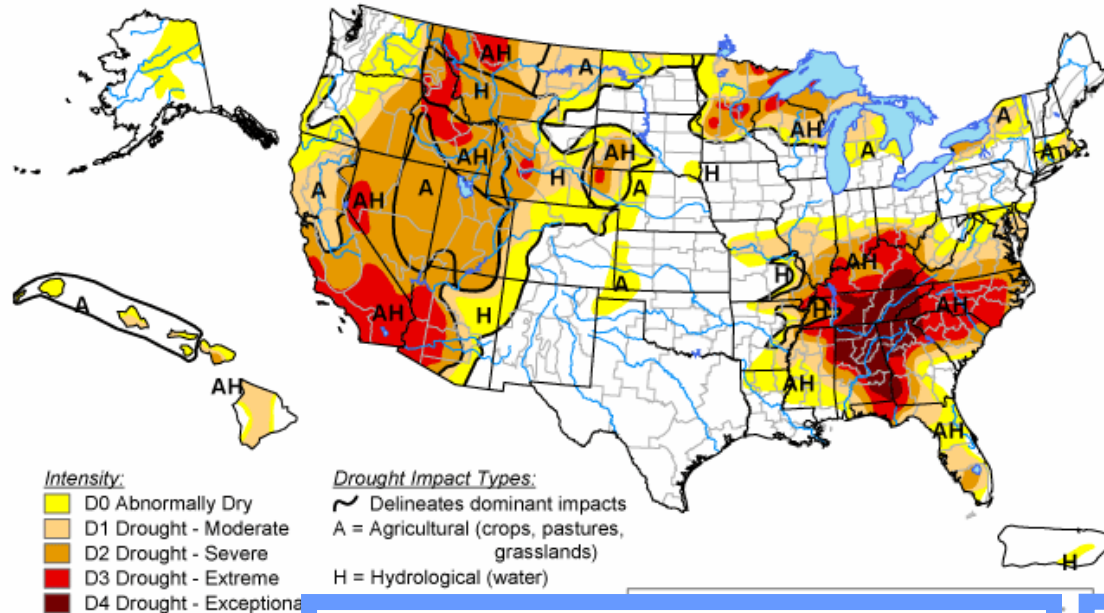
National Drought Monitor

Issued September 11, 2007

U.S. Drought Monitor

September 11, 2007

Valid 8 a.m. EDT



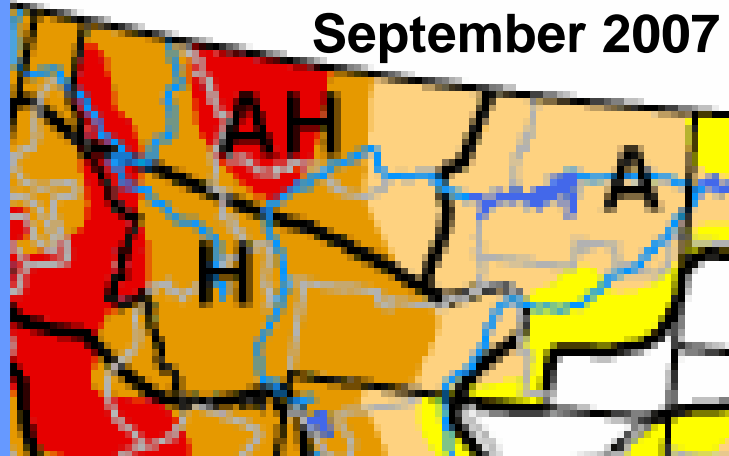
The Drought Monitor focuses on local conditions. Local conditions may vary. See the Drought Monitor website for forecast statements.

<http://drought.unl.edu>

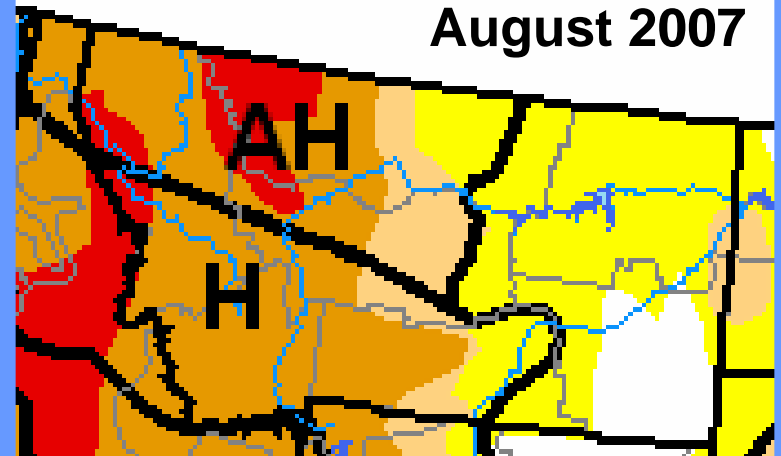
💧 Drought expansion

- All except southeast Montana in drought category
- Expansion of D3 along Rocky Mountain Front and Montana/Idaho border
- Expansion of D2 and D1 into central and eastern Montana

September 2007



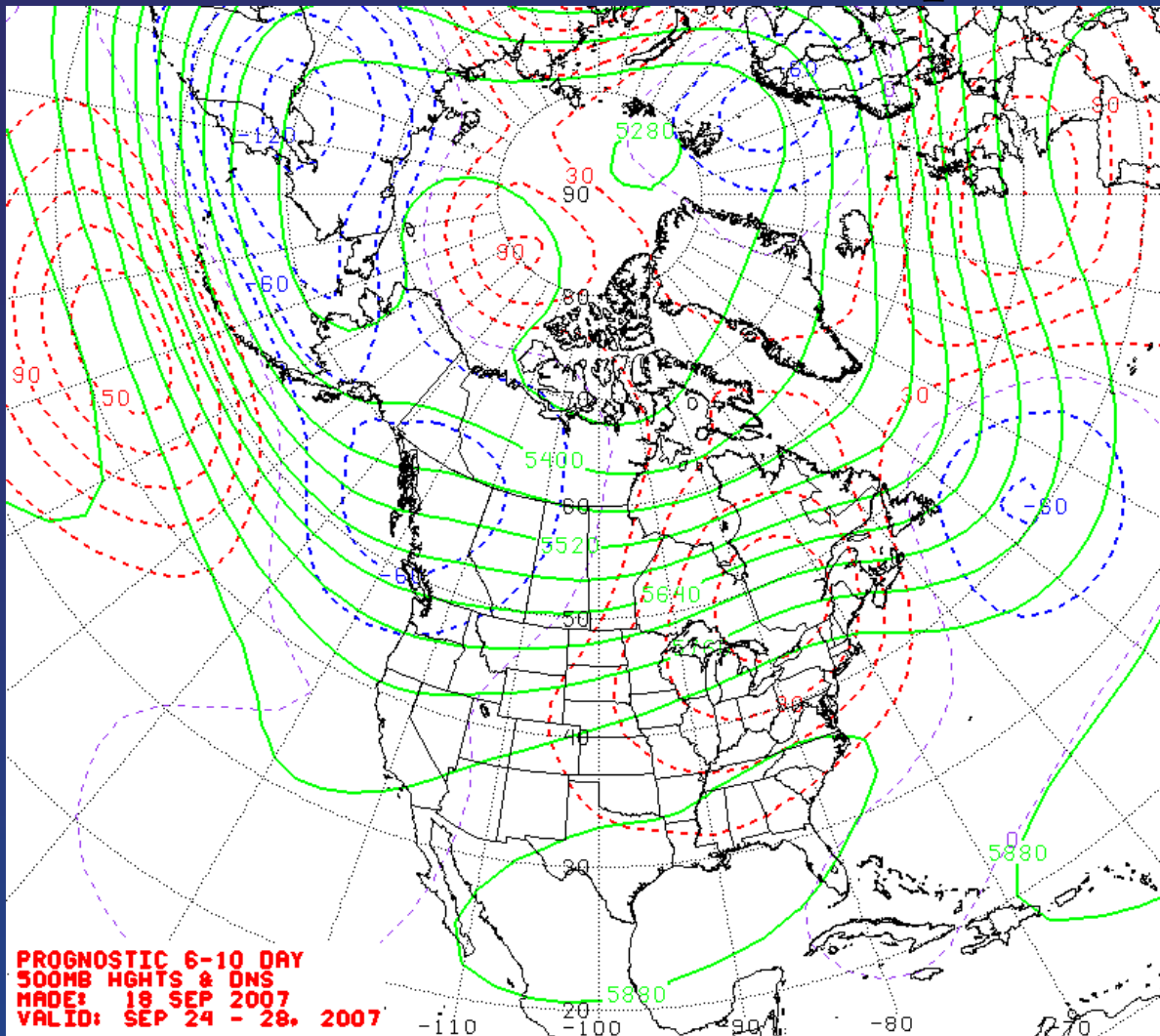
August 2007



6 – 10 Day Forecast

500 mb pattern

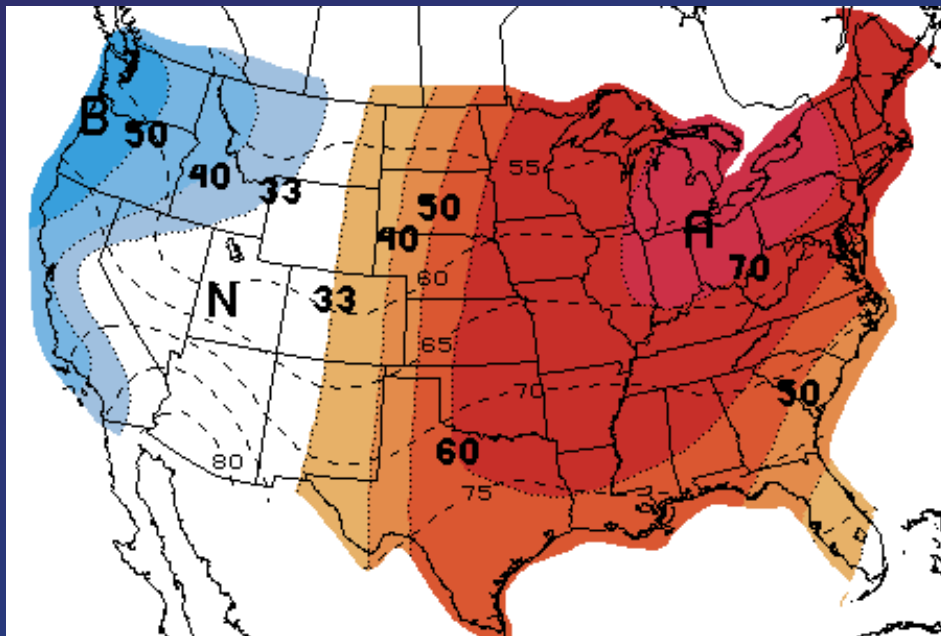
- September 24-28
- Low pressure trough over Pacific Northwest and Montana



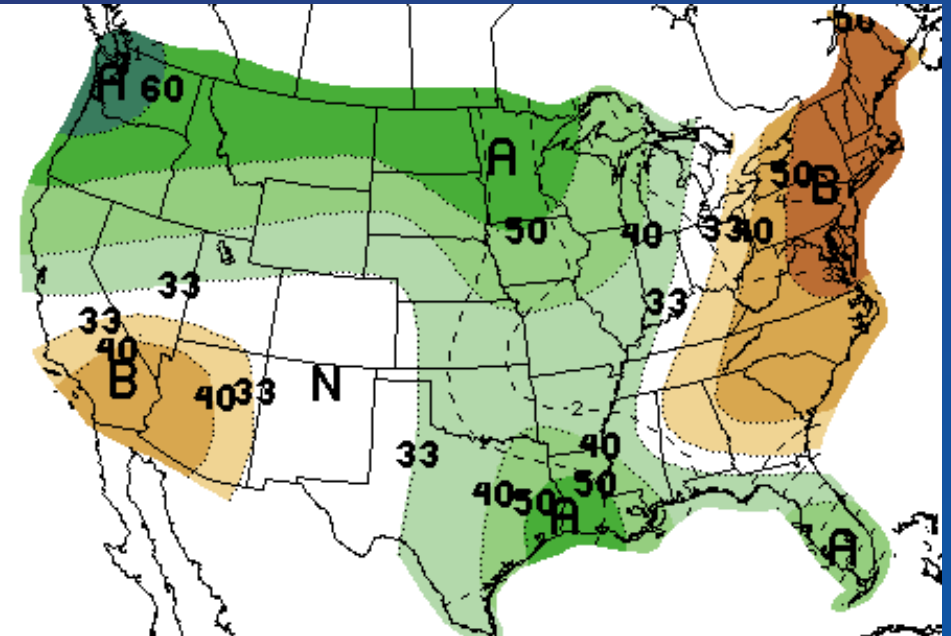
6 – 10 Day Forecast

Temperature and Precipitation Outlook

September 24-28



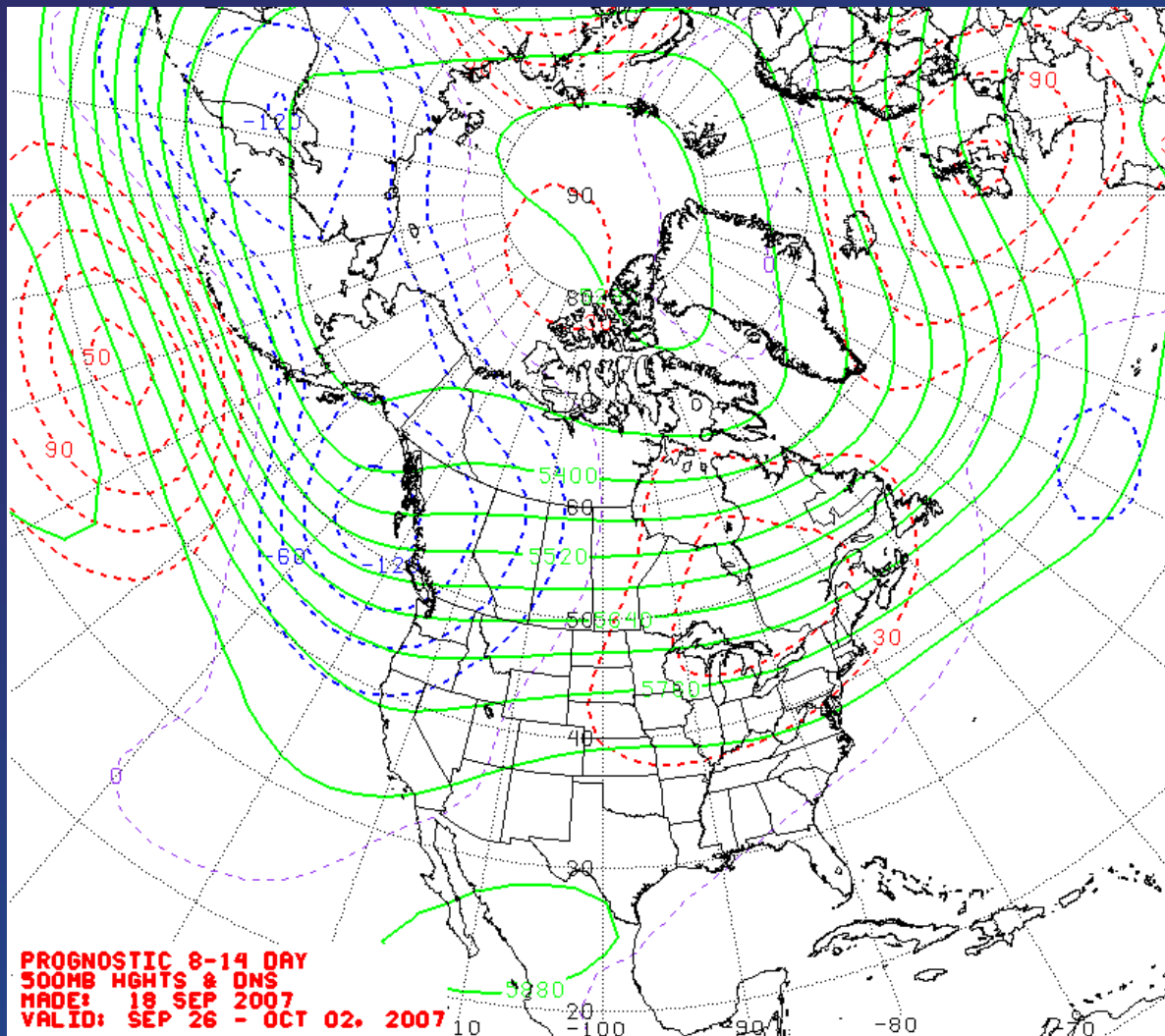
- Western half – 33% to 50% chance of below normal temperatures
- Eastern border – 33% to 40% chance of above normal temperatures
- Highs – Mid 60s to lower 70s
- Lows – 30s



- 50% to 60% chance for above normal precipitation north and central
- 33% to 40% chance for above normal precipitation south
- Precipitation – 1.00 to 1.50 inches

8 – 14 Day Forecast

500 mb pattern

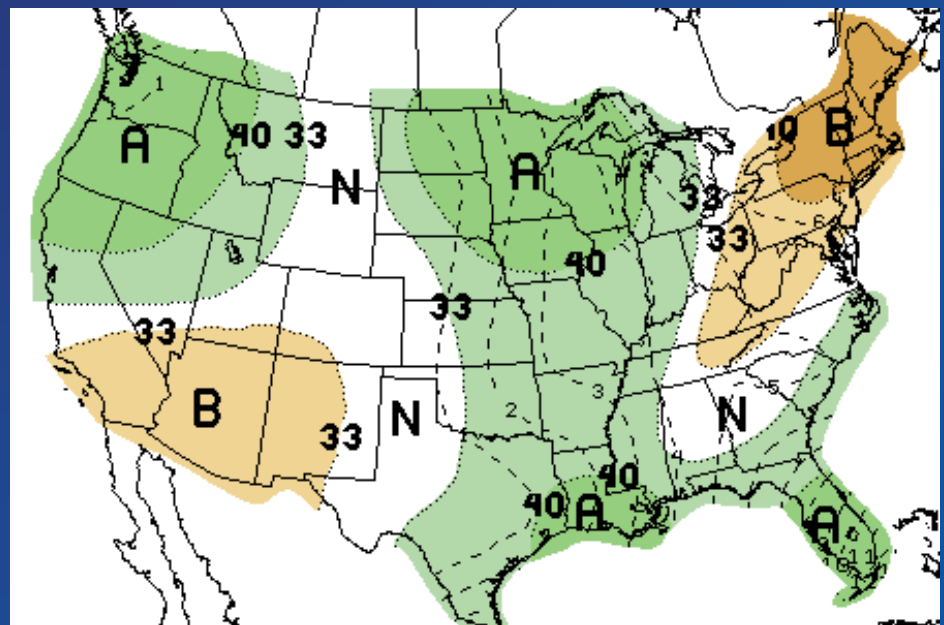
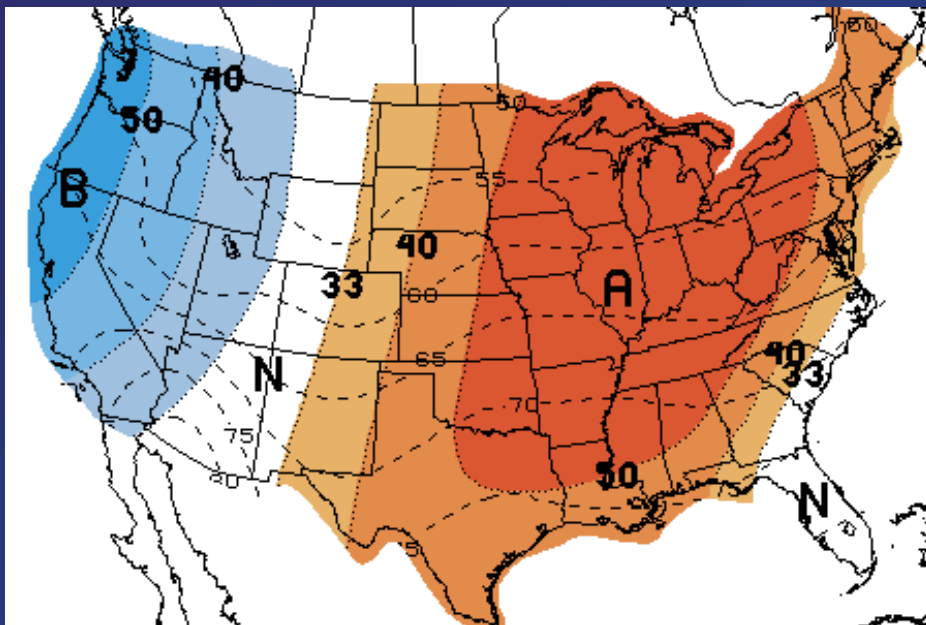


- September 26 – October 2
- Low pressure trough remains over Pacific Northwest and Montana

8 – 14 Day Forecast

Temperature and Precipitation Outlook

September 26 – October 2

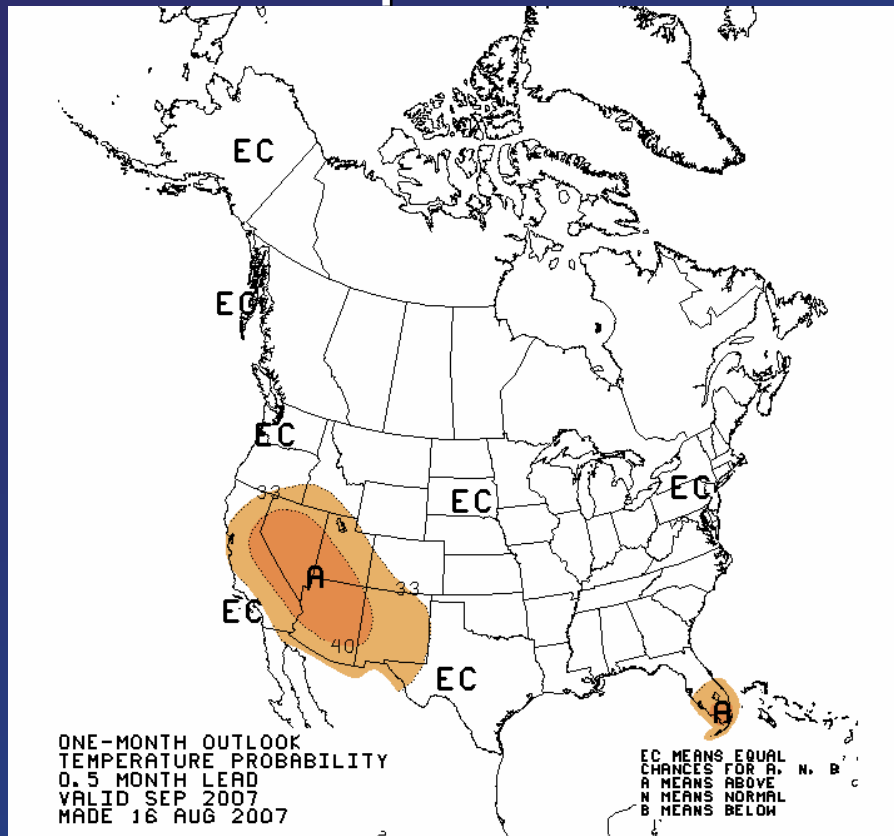


- 33% - 40% chance for below normal temperatures west
- 33% - 40% chance for above normal temperatures eastern border

- 33% - 50% chance for above normal precipitation west... central and eastern border

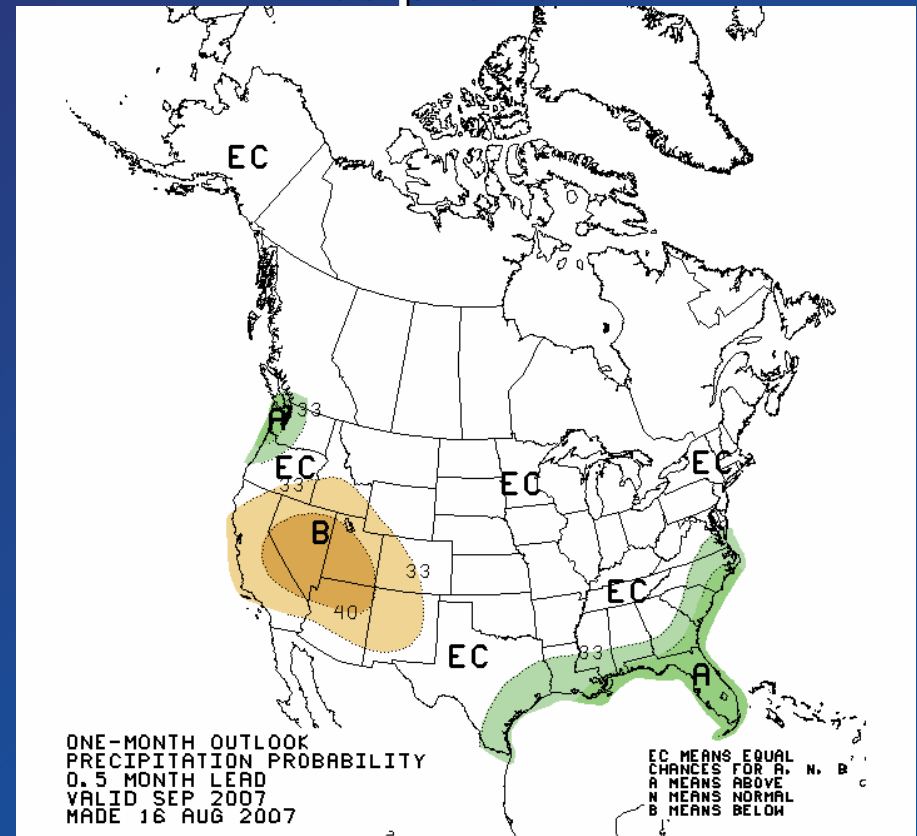
September Outlook

Temperature



- 💧 No forecast skill ... Equal chances for above... below or near normal temperatures

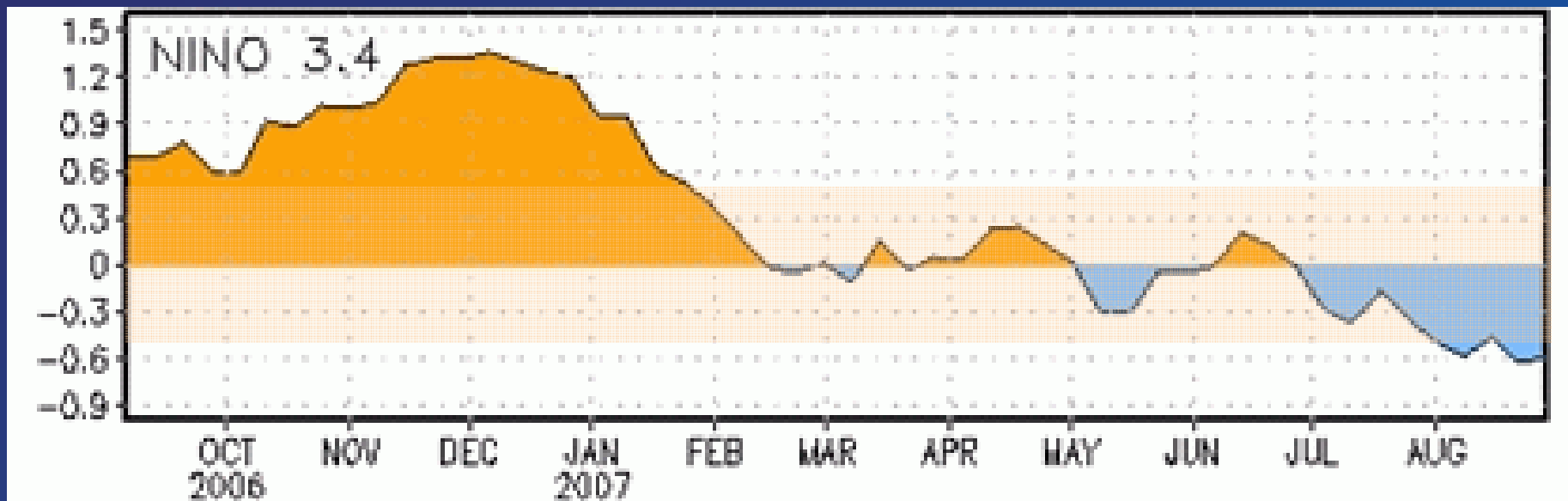
Precipitation



- 💧 No forecast skill ... Equal chances for above... below or near normal precipitation

El Niño / La Niña

- La Niña conditions will further develop and possibly strengthen during the next 3 months.



Model Forecasts

Sea Surface Temperatures

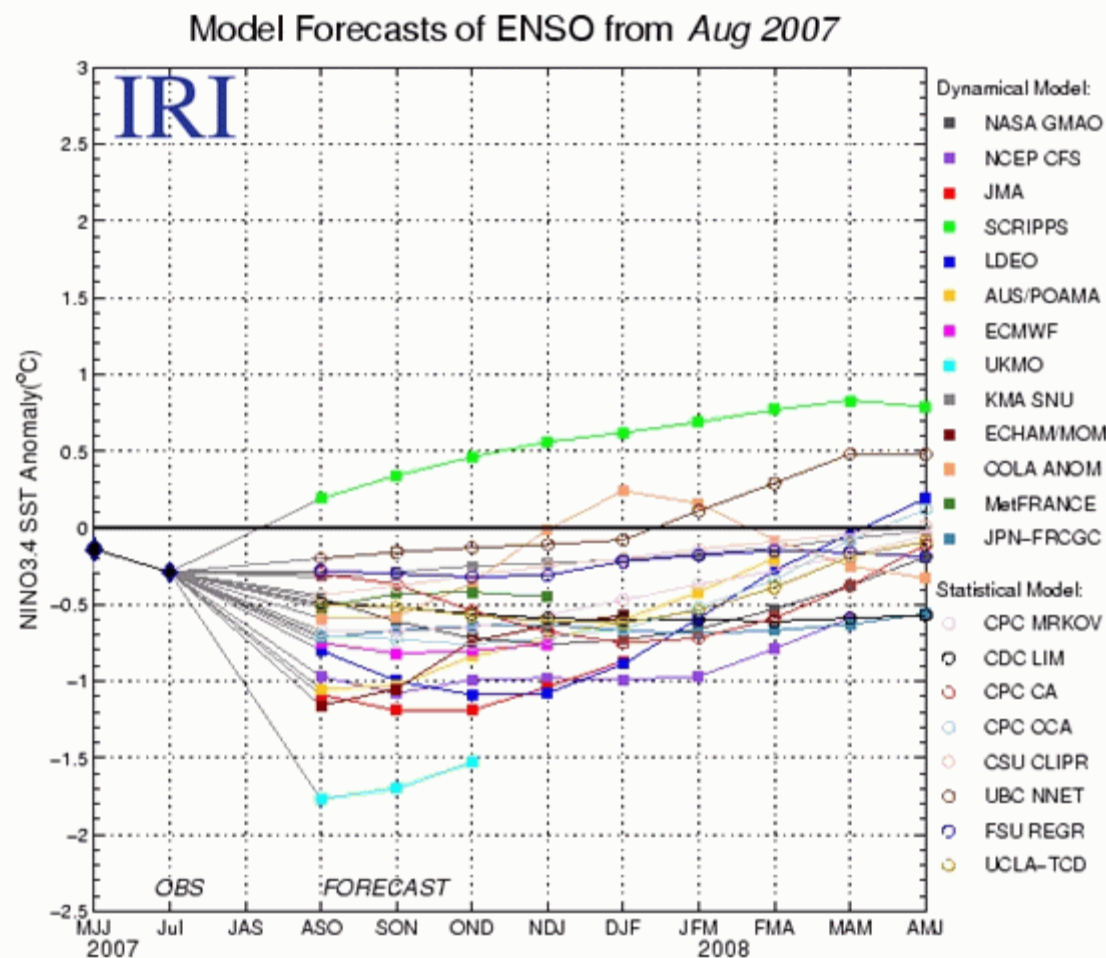
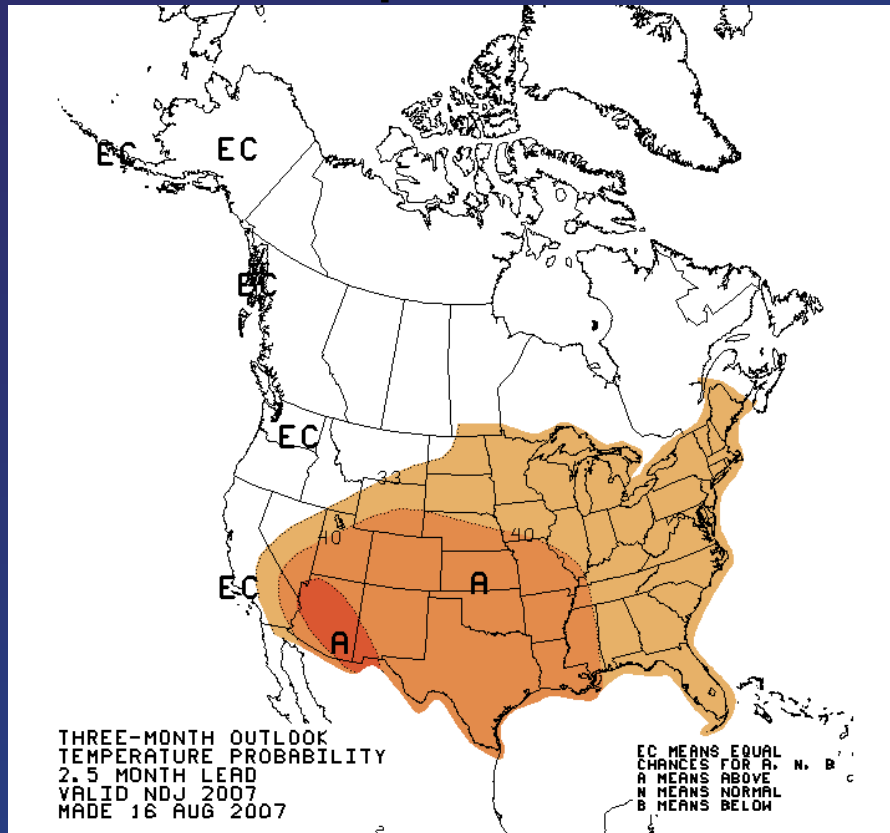


Figure 5. Forecasts of sea surface temperature (SST) anomalies for the Niño 3.4 region (5°N-5°S, 120°W-170°W). Figure courtesy of the International Research Institute (IRI) for Climate and Society.

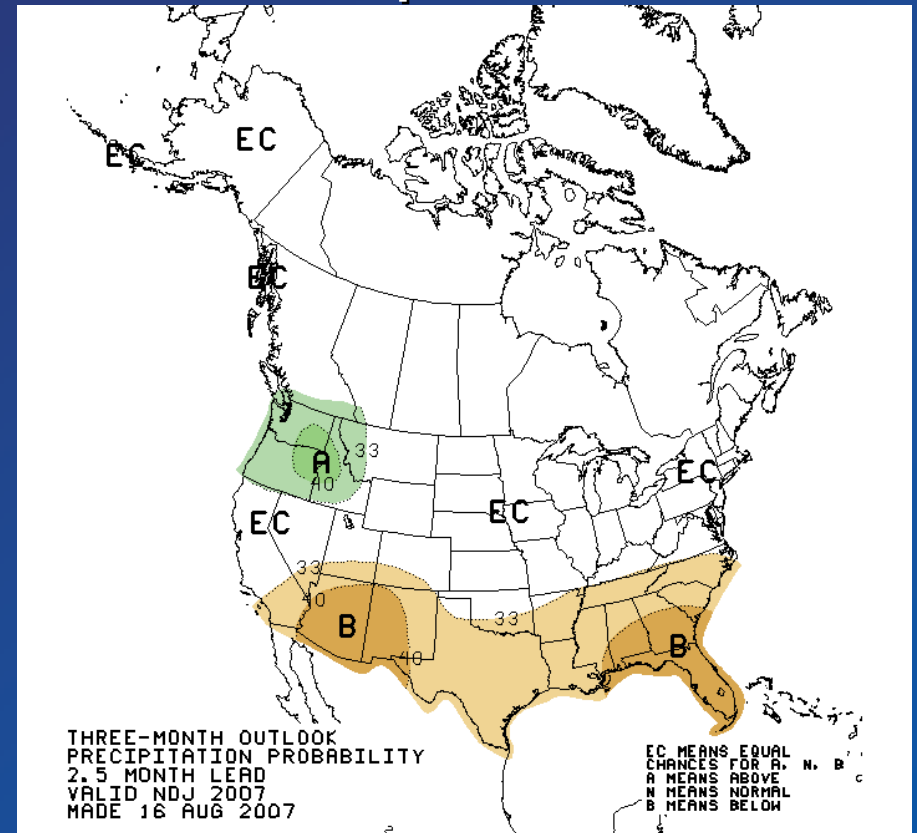
November - January Outlook

Temperature



- ☹ Southeast – 33% to 40% chance for above normal temperatures

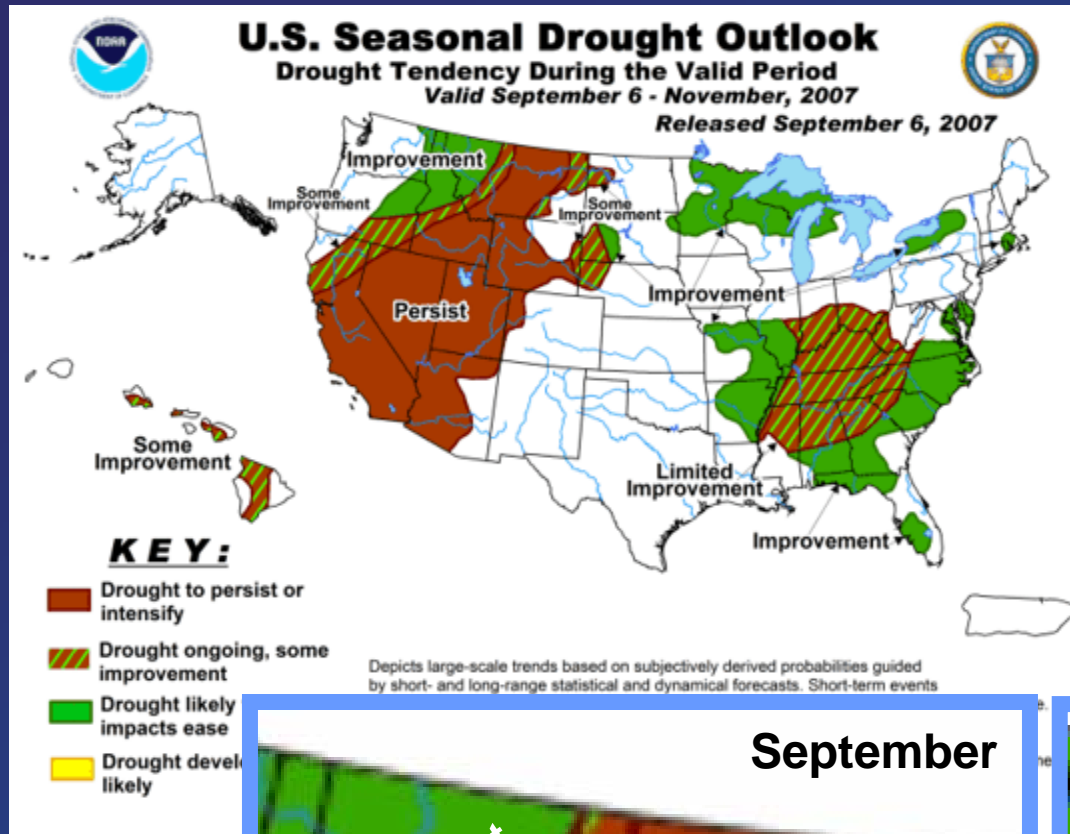
Precipitation



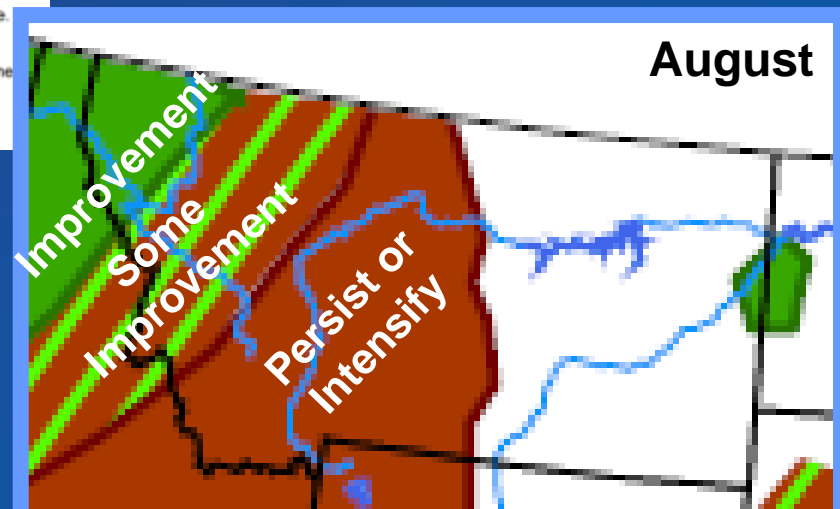
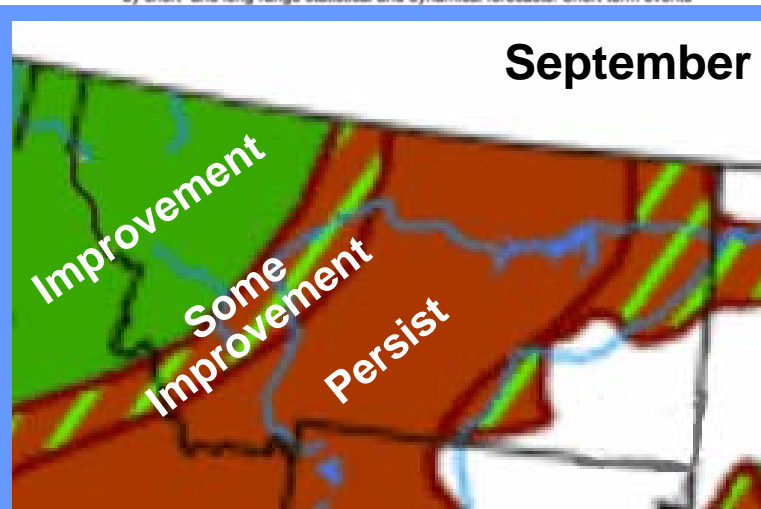
- ☹ West – 33% to 40% chance for above normal precipitation

Drought Outlook through November

Issued September 6, 2007



- Improvement expected northwest and east
- Persistence expected southwest through north central



To sum up...

- 💧 Summer season (June-July-August) saw much above normal temperatures and much below normal precipitation
- 💧 Water year precipitation near normal for most of Montana
 - *Lost more ground with lack of precipitation west of divide and along Rocky Mountain Front*
- 💧 September dry for much of state so far
 - *About one third of state at less than 50% of normal*
- 💧 Crop year precipitation remained below to well below normal most of western half of state through August
- 💧 Drought categories expanded over much of state
- 💧 Showers expected through end of month and into early October

weather.gov

weather.gov/billings

weather.gov/glasgow

weather.gov/missoula

weather.gov/greatfalls